

Bear Lake State Park

Hazard Mitigation Plan

2004



Prepared by the Utah Division of Emergency Services and Homeland Security

TABLE OF CONTENTS

INTRODUCTION

WHAT IS HAZARD MITIGATION?

STATEMENT OF RISK

OVERVIEW

BEAR LAKE OVERVIEW

BEAR LAKE STATE PARK OVERVIEW

Bear Lake State Park Marina

Bear Lake State Park Rendezvous Beach

Bear Lake State Park Eastside

RICH COUNTY OVERVIEW

HAZARDS

FLOODING

EARTHQUAKES

LANDSLIDES

WILDFIRES

SEVERE WEATHER

DAM FAILURE

DROUGHT

BEAR LAKE STATE PARK HAZARD MITIGATION RECOMMENDATIONS

INTRODUCTION

Bear Lake State Park, located on the shores of Bear Lake in Rich County, Utah has the potential to experience and be impacted from a natural hazard event.

This plan attempts to identify the hazards, understand what is vulnerable and develop solutions that can significantly reduce threat to life, property and economic stability of Bear Lake State Park. An overview of natural hazards in Rich County, and those hazards that affect the County, was essential in the development of this plan.

Much of the information and development of mitigation strategies for the Bear Lake State Park were developed utilizing the Bear River Association of Governments (BRAG) 2004 Natural Hazard Mitigation Plan. A county-wide regional perspective was used in identifying and developing mitigation strategies. This gives the plan a broader sense of the hazards and more importantly the secondary impact from these hazards to the Bear Lake State Park facilities.

This is not an emergency response or management plan. Certainly, the plan can be used to identify weaknesses and refocus emergency response planning. Enhanced emergency response planning is an important mitigation strategy. However, the focus of this plan is to support better decision making directed toward avoidance of future risks and the implementation of activities or projects that will eliminate or reduce the risk for those that may already have exposure to a natural hazard threat.

STATEMENT OF RISK

The scope and purpose of this mitigation plan is to define and identifying natural hazards, which could affect Bear Lake State Park. Specifically Bear Lake Marina, Rendezvous Beach, First Point, South Eden, Cisco Beach, and North Eden State Parks. During the planning process landslide, earthquake, wildfire, drought, severe weather, and miscellaneous hazards we evaluated. The overall risk of property, lives, and the environment at Bear Lake State Park from these natural hazards is very limited.

WHAT IS HAZARD MITIGATION?

Hazard mitigation is defined as any cost-effective action(s) that has the effect of reducing, limiting, or preventing vulnerability of people, property, and the environment to potentially damaging, harmful, or costly hazards. Hazard mitigation measures, which can be used to eliminate or minimize the risk to life and property, fall into three categories. First: are those that keep the hazard away from people, property, and structures. Second: are those that keep people, property, and structures away from the hazard. Third: are those that do not address the hazard at all but rather reduce the impact of the hazard on the victims such as insurance. This mitigation plan has strategies that fall into all three categories.

Hazard mitigation measures must be practical, cost effective, and environmentally and politically acceptable. Actions taken to limit the vulnerability of society to hazards must not in themselves be more costly than the value of anticipated damages.

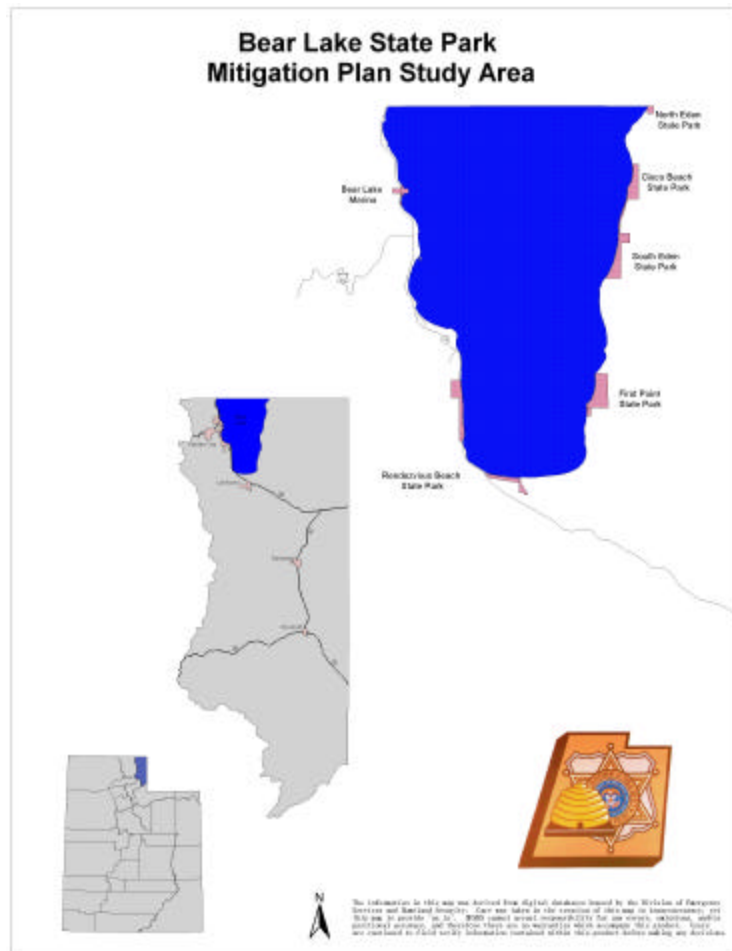
OVERVIEW

Bear Lake Overview

Bear Lake is near the mid-point of the Bear River. Historically, the Bear River did not naturally flow into Bear Lake. In 1902 a predecessor of Utah Power and Light constructed inlet and outlet canals in an effort to divert Bear River Water into the lake for later release during the agricultural growing season. River modifications have created an active storage capacity of 1,452,000 acre-feet in Bear Lake and the ability to control the flow of the river.

Bear Lake was formed some 28,000 years ago by earthquake activity. Its unique aqua-blue color is the result of calcium carbonates suspended in the lake. Its elevation is 5,923 feet; Bear Lake is 20 miles long, 8 miles wide, 208' deep, and covers 112 square miles. Water skiing, swimming, scuba diving, sailing and fishing for cutthroat, mackinaw and whitefish are favorite activities on the lake. Groomed snowmobile trails (200+ miles) connect Utah and Idaho in one of the nation's first interstate snowmobile trail complexes.

The name Rendezvous Beach, a popular area for groups and family reunions, is derived from the annual Mountain Men, Indian, and supply caravans' rendezvous held in the area between 1825 and 1840. In 1827 and 1828, the Rocky Mountain fur companies, including Milton G. Sublette, David E. Jackson and Jedediah Smith, gathered at the south end of Bear Lake to trade furs for supplies and to eat, drink, tell stories, and compete with each other. The many campfires lit by the 1,000+ attendees caused one observer to call the area "a lighted city". An annual Mountain Man Rendezvous is held there in the fall.



East Side-Cisco Beach-South Eden-North Eden-First Point on the east shore of the lake have what is consider primitive camping and day use areas. The terrain is rocky and the water depth drops off quickly to 208 feet. Activities enjoyed there include scuba diving, boating and fishing. County Road 2022 runs north, south on the east side of the lake, and adjacent to a steep mountain front.

Cisco Beach is famous for its midwinter fishing with dip nets for the little 7" Bonneville Cisco, a member of the white fish family. For a week to ten days in January, swarms of the little fish come close to the rocky shore to spawn. They are easily scooped up by hardy fishermen wading waist-deep in the icy water or through holes in the ice if the lake is frozen. Cisco Beach is also known for its excellent inland water scuba diving opportunities. The rocky bottom and the steep drop-off close to shore make this location a favorite of divers from the Tri-State area. Two diving areas have been marked and designated for this activity. Wooden walkways assist the diver in accessing the water with his needed equipment.

Bear Lake is a great vacation destination. Additional recreational opportunities include: hiking the Limber Pine Trail, tour Minnetonka Cave, and visiting the Bear Lake National Wildlife Refuge. Cultural activities include local dinner theater and local diners that feature the "famous" Bear Lake raspberry milkshake. The surrounding area provides unlimited road and mountain biking opportunities. A short drive takes you to some excellent riding areas for off-highway vehicle riding. - *Utah Division of State Parks*

Bear Lake State Park

Bear Lake State Park Marina

The marina provides a sheltered harbor, 80-foot wide, five-lane, concrete boat launch ramp, 377 boat slips, marina sanitary disposal station, group pavilion, modern restrooms, hot showers and visitor center. Year round fishing is a popular activity. A concessionaire provides boat rentals, gasoline, fishing/boating supplies and fast-food grill. - *Utah Division of State Parks*



Bear Lake State Park Rendezvous Beach

Bear Lake State Park Rendezvous Beach is located on the south shore near Garden City on Highway 89. It extends for 1.25 miles and offers 178 campsites, three group-use camping areas, and cabins available through a concessionaire, modern restrooms, hot showers and utility hookups. A wide, sandy beach provides excellent camping, picnicking and small watercraft activity. Rendezvous Beach is a



is

popular area for groups and family reunions and the site of an annual Mountain Man Rendezvous. Bear Lake Sails offers small boat rentals at Rendezvous Beach at Bear Lake State Park. - *Utah Division of State Parks*

Bear Lake State Park Eastside

Bear Lake State Park Eastside is located 10 miles north of Laketown and is popular with scuba divers, boaters, and anglers. Six primitive campgrounds provide three 2-lane concrete boat launch ramps. Drinking water is available at the South Eden campground. - *Utah Division of State Parks*



***Camping Areas - Utah Division of State Parks – Bear Lake State Park –
ReserveAmerica***

Rich County Overview

Rich County comprises 1022 square miles and is bordered on the west and south by the Bear River and Monte Cristo Ranges and on the east by the rolling desert highlands of southwestern Wyoming. To the north are more uplands and the mountain ranges of southeastern Idaho. Bear Lake is the largest geographical feature in the county that extends 20 miles in length. Forty-four percent of Rich County is administered by federal and state agencies.

In 2000, Rich County had a population of 1,961 people; it is the third smallest county in the state. The county has 658,039 acres of land, 523,744 acres in farms, of which 60 percent are full-time farms. Three-quarters of Rich County's land is used for grazing. Total nonagricultural employment in 2000 was 559 employees. Bear Lake's recreational uses have also provided employment in real estate and tourism-related trades.

The average family and household size are both slightly smaller than the state averages. The median age in 2000 was 34.3 years, compared to the state median of 27.1

years. Data from the 2000 Census showed that 14.1 percent of the population was over age 65. The Garden City/Laketown area's median age in 2000 was 40.9 years, a decline from 30 years in 1990.

It is interesting to note that the most significant growth in the Garden City/Laketown area has been in the unincorporated areas outside of the city boundaries, where many of the Bear Lake recreational developments are located. In the past ten years, the population in the unincorporated area around Garden City/Laketown has increased 90 percent, from 181 to 334 persons. The number of households also increased, from 56 to 127. Garden City experienced similar growth from 1990 to 2000, both the total population and the number of households increased 85 percent. However, the population and number of households decreased in Laketown, due in part to culinary water problems and the availability of land.

Rich County has the lowest wage rate among Utah's 29 counties. In 2000, the average annual wage was \$15,564; 54 percent of the state average of \$28,812 (BRAG Consolidated Plan, 2002). Other income measures show similar results; median family, household, and per capita income are all significantly lower than state averages. In 1999, 11.3 percent of the county population lived below the poverty rate, as compared to a statewide rate of 9.2 percent. Unemployment rates in the county are also slightly higher than the state average, 3.7 percent versus 3.2 percent.

Tracking per capita income changes over the past ten years indicates that Rich County has traditionally lagged behind the state average, and the gap has continued to grow. The per capita income decreased from 82 percent of the state's average in 1990 to 73 percent in 2000.

Data from the Utah Department of Workforce Services estimate that while the Randolph/Woodruff area saw a decrease of 21 employees (11%) from 1990 to 2001, the Garden City/Laketown area added 223 employees (137%) during the same time. However, 60 percent of the 2001 nonagricultural employment in the Garden City/Laketown area was in the service and trade industries. The service sector saw the greatest increase in employment from 1990 to 2001, adding an additional 112 employees. Employees in the service industry have an estimated average annual income of \$10,488, which is 36 percent of the state's average income. Trade employees have an estimated average annual wage slightly lower than the service industry at \$10,428. Examining the data demonstrates that the increase in nonagricultural employment has created households who are in the greatest need for affordable housing. The extremely low wages in Rich County, particularly in the expanding trade and service sectors, imply a strong need for affordable housing.

Further proof of the economic difficulties Rich County residents are facing is found in the number of school age children enrolled in the free/reduced lunch program. In the 2001-2002 school year, Rich County School District had 473 students; 341 of them were enrolled in the free/reduced lunch program. This is 72 percent of the total student body; a number that strongly demonstrates the number of very-low and low-income families in the county who are require suitable affordable housing.

Rich County is also known for its recreation spots including the Wasatch National Forest, Bear Lake State Park, and Rendezvous Beach State Park. Bear Lake, once called the Sea of Silence, invites vacationers of all types to its beaches. In the summer, water skiing, sailing, swimming, fishing, and camping are popular activities, and in the winter months, snowmobiling, tubing, and ice fishing are popular.

Rich County has none of the industrial, educational or cultural assets of Box Elder or Cache Counties. Bear Lake has carried this sparsely populated county's economy for some time. This economic picture is rounded out by a number of cattle ranches and agricultural farms that make up the other half of the picture. This area survives based on its service community associated with summer and winter recreational seasons. A definite lack of diversity in its economy has led Rich County to a relatively flat growth rate, which in recent years has actually been negative. The recreational potential is still strong and the recreation needs of increasing numbers of Wasatch Front residents and Cache Valley residents will provide increased demand for the recreational assets found in Rich County. The County is also subject to dramatic seasonal population shifts due to "Snow Birds", and an under-utilized winter season.

HAZARDS

FLOODING

Background

The flood risk for Rich County is minimal. The county is sparsely populated and the communities are generally not located near a flood source. The Bear River passes through Rich County in an area with some agricultural use. It flows primarily through rural areas with little or no development.

All of the four incorporated cities in Rich County have small streams that pass through the communities. These communities have historically experienced minimal impacts from flooding.

The southern half of Bear Lake is located in Rich County. A great deal of beachfront development has occurred along the shores of Bear Lake. The rising lake level has rarely threatened lakeshore development but some flooding of homes has occurred. Pacificorp operates a hydroelectric facility on the lake and has purchased some of the flood prone lakeshore properties to mitigate the impact of high lake level flooding.

Most of the growth in terms of new development is occurring in Garden City and to a lesser extent Laketown. Most of this new development is second home housing associated with the Bear Lake recreation area. A great deal of this development is on the hillsides above Garden City proper. Some risk of flooding is possible as this development encroaches on drainages.

New development on the Lakeshore could also increase the property at risk. However, this risk is minimal.

BEAR LAKE STATE PARK FLOODING

Bear Lake State Park Flooding Vulnerability Assessment

Flooding to Bear Lake State Park facilities from Bear Lake would be minimal given the lake level is controlled.

Big Creek flows to the lake through the eastern portion of Rendezvous Beach State Park and minimal flooding may occur in this area from a spring snowmelt event. Debris related flooding is always a concern and would be the most likely scenario for flooding in this area of the park.

Big Creek is spring feed and meanders through flat lands to the south of Bear Lake. The access road to four rental cabins and additional camping sites has a large culvert that would handle an increase in flows. The rental cabins are substantially elevated and would not be impacted by flooding. Once passing through the culvert, the channel is deep enough that an increase in flows would more than likely not impact the camping sites or utility systems.

It is important to note that cattle grazing along Big Creek could limit the ability of the stream to handle flooding due to the degradation of stream bank and channel. Cattle fences are located up stream from the bridge and culvert and may catch debris, which would affect flows and increase the potential for flooding in the area.

Rock slides as a result of a severe summer thunderstorm or early spontaneous spring snowmelt event could impact access to Bear Lake State Park east side camping and day use sites facilities. Severe summer thunderstorms could also produce flooding from South Eden and North Eden Canyons. Flooding from these two canyons would impact the County Road 2022 that runs adjacent to Bear Lake thereby impacting access to camping and day use sites.

EARTHQUAKES

Background

Although not as seismically active as Box Elder and Cache Counties, Rich County does have recorded seismic activity. The predominate and most active faulting is the Bear Lake Fault on the east side of Bear Lake

On November 9, 1884, the Bear Lake Valley experienced an estimated 6.3 magnitude earthquake with the epicenter near Paris, Idaho followed by aftershocks of 2.3 magnitudes. The earthquake was felt as far away as Ogden.

Utah Geological Survey, *Bear Lake State Park, East and South Shore Properties 2004* report indicate that the Bear Lake Fault is active with evidence of large earthquakes in the recent past. Based on 1962-1993 data, there is a 10% chance every year of an earthquake of 3.0 magnitude or greater.

Bear Lake State Park Earthquake Vulnerability Assessment

Utah Geological Survey, *Bear Lake State Park, East and South Shore Properties 2004* indicates that the East Bear Lake fault zone is geologically active, and has experienced a larger magnitude (approximately 6.3) earthquake as recently as 1884 (Milligan, 2004). In the past 39,000 years, five to seven prehistoric earthquakes have been large enough to rupture the ground surface. An earthquake event could generate the following:

- rock falls on the east shore,
- subsidence as a result of fault rupture could create surface and ground water flooding, liquifaction in areas sandy water saturated soils along the lake front areas of Rendezvous Beach and Big Creek,
- lake shore flooding because of a seiche.

Any one of these threats could affect the park by damaging buildings, infrastructure or limiting the park's ability to generate income. New lakeshore development on the east shore will be located near the Bear Lake Fault.

Additionally, economic systems are such that a large magnitude earthquake on the Wasatch Fault impact the Wasatch Front could have considerable financial impact to Bear Lake State Park. Repairing earthquake damage reduces financial resources often lessening the amount spent on recreation.

Earthquake HAZUS Analysis

HAZUS is a regional earthquake loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences (NIBS). The primary purpose of HAZUS is to provide a methodology and software application to develop earthquake losses at a regional scale. Local, state and regional officials to plan and stimulate efforts to reduce risks from earthquakes and to prepare for emergency response and recovery can use these loss estimates.

The results of the model ran for Rich County simulates a 2,500 year event with an earthquake magnitude of 7.0. HAZUS produced the following loss estimation values for Rich County:

- Road and power lines - \$22,014,826
- Human casualties within the County that would require some medical attention but not life threatening - .006% of the County population, 12 people.
- Economic losses - \$2.59 million in lost wages, \$37.4 million in capitol stock (buildings), \$403 million in transportation, \$6.5 million other building economic losses
- Building damage to include commercial, residential and single family homes – 13.5% would experience extensive to severe damage, 52% would

experience slight to no damage and 30% would experience moderate damage.

LANDSLIDES

Background

The steeper slopes of the Bear River Mountains on the west side of the county as they descend into the Bear Lake Valley have indications of historical landslide activity. Much of this area is where summer cabins are located.

Bear Lake State Park Landslide Vulnerability Assessment

The potential for debris flows to limit access and impact to park facilities exists in North and South Eden. To a lesser degree smaller unnamed drainages along the east shore post the same threat. Transportation routes into the area could be interrupted impacting use of the park facilities. The Landslide Map of Utah compiled by Kimm M. Harty with the Utah Geologic and Mineral Survey shows several areas of rock fall hazard along the slope on the eastern shore.

WILDFIRE

Background

Wildfires occur with some frequency in Rich County. The vast majority occurs in areas that are predominately sage and scrub vegetation on BLM owned land. Most fires rarely threaten human safety or property and are often allowed to burn. The primary conflict area in terms of threat to property as it related to wildfire are areas above Garden City town proper, in mostly secondary home developments associated with the Bear Lake Recreation area. Some of these homes are built in heavily timbered areas.

Portions of the Cache National Forest are located in western Rich County. Transitioning down slope from the forest into the Bear Lake Valley and Garden City a significant number of cabins are located in Garden City above the traditional town center. Some of these homes are built in heavy vegetation and timber. Many are surrounded by lower sage type vegetation.

These areas are at risk from wildfire originating in the Forest Service managed land to the west and human caused fire through or below the development. Much of this development is bisected by U.S 89 as it makes its rather steep decent into Garden City from Cache County. Sparks caused by overheating brakes on heavy trucks have been known to start fires adjacent to the road. In the right conditions, these types of fires can quickly spread to portions of the Bridgerland development and others.



Bear Lake State Park Wildfire Vulnerability Assessment

The potential for impact to park facilities related to wildfire is minimal as is the economic impact. Transportation routes into the area could be interrupted impacting use of the park facilities. The Statewide Fire Risk Assessment shows areas of extreme wildfire risk east of South Eden and First Point State Parks. In both cases this elevated risk continues into the parks boundaries. A wildfire risk defined as moderate exists for North Eden and Cisco Beach State Parks. Observation made on October 2, 2004 by the State Division of Emergency Services (DES) verified the Statewide Fire Risk Assessment. Humans are the ignition source for the majority of Utah's wildfire, campground and campfires increase the number of ignition sources.

SEVERE WEATHER

Background

Rich County is regarded as having severe winters. An early settler described the climate as "nine months of winter and three months of late fall". Woodruff holds the statewide records for the lowest yearly temperatures (-50 F).

History of Severe Weather Events in Rich County (1954-1999)			
Date	Severe Weather Event	Date	Severe Weather Event
May 1954	Tornado	March 1997	Spring Weather
April 1962	Wind	May 1997	Winter Weather
September 1965	Hail, Lightning, Severe Storm/Thunder Storm, Winter Weather	October 1997	Winter Weather
March 1967	Wind, Winter Weather	November 1997	Winter Weather
January 1971	Winter Weather	December 1997	Winter Weather
December 1972	Wind, Winter Weather	January 1998	Winter Weather
March 1975	Wind, Winter Weather	February 1998	Winter Weather
November 1975	Winter Weather	March 1998	Winter Weather
December 1975	Winter Weather	April 1998	Winter Weather
July 1981	Lightning	June 1998	Summer Weather
December 1990	Severe Storm/thunder Storm, Wind	November 1998	Winter Weather
January 1991	Winter Weather	December 1998	Winter Weather
February 1996	Winter Weather	January 1999	Winter Weather
November 1996	Winter Weather	April 1999	Winter Weather
December 1996	Winter Weather	December 1999	Winter Weather
January 1997	Winter Weather		
February 1997	Winter Weather		
Source: National Climatic Data Center (http://www.ncdc.noaa.gov/oa/ncdc.html)			

Bear Lake State Park Severe Weather Vulnerability Assessment

The potential for impact to park facilities related to severe winter weather and or is limited to the economic impact. Transportation routes into the area could be interrupted

affecting use of the park facilities. Severe summer thunderstorms that result in hail have the potential to damage park facilities and injure staff.

DAM FAILURE

Background

There are 525 regulated dams located in Rich County. Most of these dams are small detention ponds, small agricultural reservoirs or livestock watering facilities and most pose a minimal threat to human safety or property.

Of the 525 regulated dams, the State of Utah Division of Water Rights designates 518 as “low hazard”. As defined by state statute, low hazard dams are those dams, which, if they fail, would cause minimal threat to human life, and economic losses would be minor or limited to damage sustained by the owner of the structure.

A total of five dams have been designated as “moderate hazard” by the State of Utah in Rich County. These moderate hazard dams which, if they fail, have a low probability of causing loss of human life, but would cause appreciable property damage, including damage to public utilities.

The State of Utah has rated two dams located near Woodruff as “high hazard” which means that, if they fail, have a high probability of causing loss of human life or extensive economic loss, including damage to critical public utilities.

Bear Lake State Park Dam Failure Vulnerability Assessment

South Eden Dam located in South Eden Canyon on the east side of Bear Lake is considered a “low hazard” dam. This would have minimal impact on Bear Lake State Park facilities.

DROUGHT

Background

Drought, and its secondary effects of insect infestation, invasive noxious weeds and wildfire all have significant harmful impacts on the agricultural industry in Rich County and surrounding Bear Lake. While these factors also affect the public, those in the agricultural sector most acutely experience the negative impacts. The agricultural sector is critical to the economies of Box Elder, Cache and Rich Counties. In Cache and Rich Counties the agricultural sector generates the greatest share of output to their respective county's economy.

Utilizing the Palmer Drought Severity Index Chart from 1895 – 2001, Rich County has experienced prolonged periods of drought in the following years:

Rich County
1900-1903
1931-1935
1976-1979
1987-1992
1999-present

Bear Lake State Park Drought Vulnerability Assessment

Lower lake water levels impact the recreational opportunities that may impact the ability to generate income. The lake level is controlled through irrigation and flood control measures and designated lake level elevation is determined each year. Bear Lake State Park revenue does not necessarily show an impact from the current drought cycle. Although there was a nine and one-half percent decrease in park entrance fees between FY 2002 and FY 2003 which may be related to lower than normal water levels.

MISCELLANEOUS HAZARDS

Visitors to Bear Lake State Park may encounter a variety of miscellaneous hazards, such as poisonous or otherwise dangerous plants, insects, or animals, excessive heat; trail side ledges, and wild animals. It is difficult to anticipate the specific outcomes of threat and risk of these hazards to park visitors. However, because the general threats from these hazards are relatively well understood by park officials, and perhaps not as well understood by park visitors, they should be addressed.

On an April 7, 2004, field review Utah Geologic Survey employees observed ranching and grazing activities on Big Creek upstream from Rendezvous Beach State Park. Activities included cows in the creek, dead cows on the creek banks, and a floating uterus. These activities may significantly impact the water quality of Big Creek as it passes through Rendezvous Beach.

Bear Lake State Park Hazard Mitigation Recommendations

RECOMMENDATION: Minimize potential impacts for flooding along Big Creek in Rendezvous Beach site

1. Monitor and maintain bridge culvert during the late May and early June, spring snowmelt season.
2. Have cattle fences removed in stream to allow for a free flow and limit debris accumulation.
3. Work with cattle ranchers to keep cattle out of stream, which will lessen stream bank degradation and allow for natural free flow of stream.
4. Develop public awareness of flooding at bridge and culvert crossing during spring snowmelt and summer thunderstorm season.
5. Design a “flood hazard” sign for bridge and culvert crossing to be used as needed.

RECOMMENDATION: Minimize potential impacts from earthquakes

1. Develop a contact list and plan for with Rich County Road Department for rock fall clean up on County Road 2022 on the east side of the Lake.
2. Develop a post earthquake damage assessment procedure for Rendezvous Beach facilities and roads for liquefaction damage.
3. Improve the disaster resistance of existing infrastructure and critical facilities.
4. Develop and conduct earthquake awareness program for Bear Lake State Park staff.
5. Buildings occupied by park workers or visitors should be built according to the International Building Code (IBC).
6. Critical infrastructure, including the culinary water and sanitary sewer/septic systems should be evaluated for strength to withstand peak horizontal ground accelerations.
7. Adequate first aid materials should be available at the park office, at the campgrounds, and park rangers should be trained in first aid. Also, consider sponsoring CERT training for state park employees.

RECOMMENDATION: Minimize potential impacts from rock falls

1. Park paths, trails, and campsites should be located well outside potential rock fall areas.
2. Hazard signs should be developed and post areas in potential rock fall areas.

RECOMMENDATION: Minimize potential impacts from wildfire

1. Discuss possibility with State and Federal Wildfire agencies regarding controlled burn or thinning of wildfire fuels
2. Post area burn restrictions. Possibly, give out wildfire awareness material and discuss burn restrictions of the surrounding areas with visitors/campers.

RECOMMENDATION: Minimize potential impacts from miscellaneous hazards

1. Strategically place signs, as determined by park management, explaining park safety considerations to park visitors about the threats from miscellaneous natural hazards.
2. Contact the Division of Water Quality to monitor water quality in Big Creek, and suggest water quality safety measures.
3. Contact Department of Agriculture, Resource Conservation, Non-Point Source Pollution, regarding Big Creek bank and channel degradation from cattle grazing.

Bear Lake State Park Mitigation Plan First Point



400 0 400 Feet



-  Roads
-  User Areas
-  State Park Boundary

The information in this map was derived from digital databases housed by the Division of Emergency Services and Homeland Security. Care was taken in the creation of this map to insure accuracy, yet this map is provided "as is". DESHS cannot accept responsibility for any errors, omissions, and/or positional accuracy, and therefore there are no warranties which accompany this product. Users are cautioned to field verify information contained within this product before making any decisions.

Bear Lake State Park Mitigation Plan

Bear Lake Marina



200 0 200 Feet



- Roads
- User Areas
- State Park Boundary

The information in this map was derived from digital databases housed by the Division of Emergency Services and Homeland Security. Care was taken in the creation of this map to insure accuracy, yet this map is provided "as is". DESHS cannot accept responsibility for any errors, omissions, and/or positional accuracy, and therefore there are no warranties which accompany this product. Users are cautioned to field verify information contained within this product before making any decisions.

Bear Lake State Park Mitigation Plan North Eden



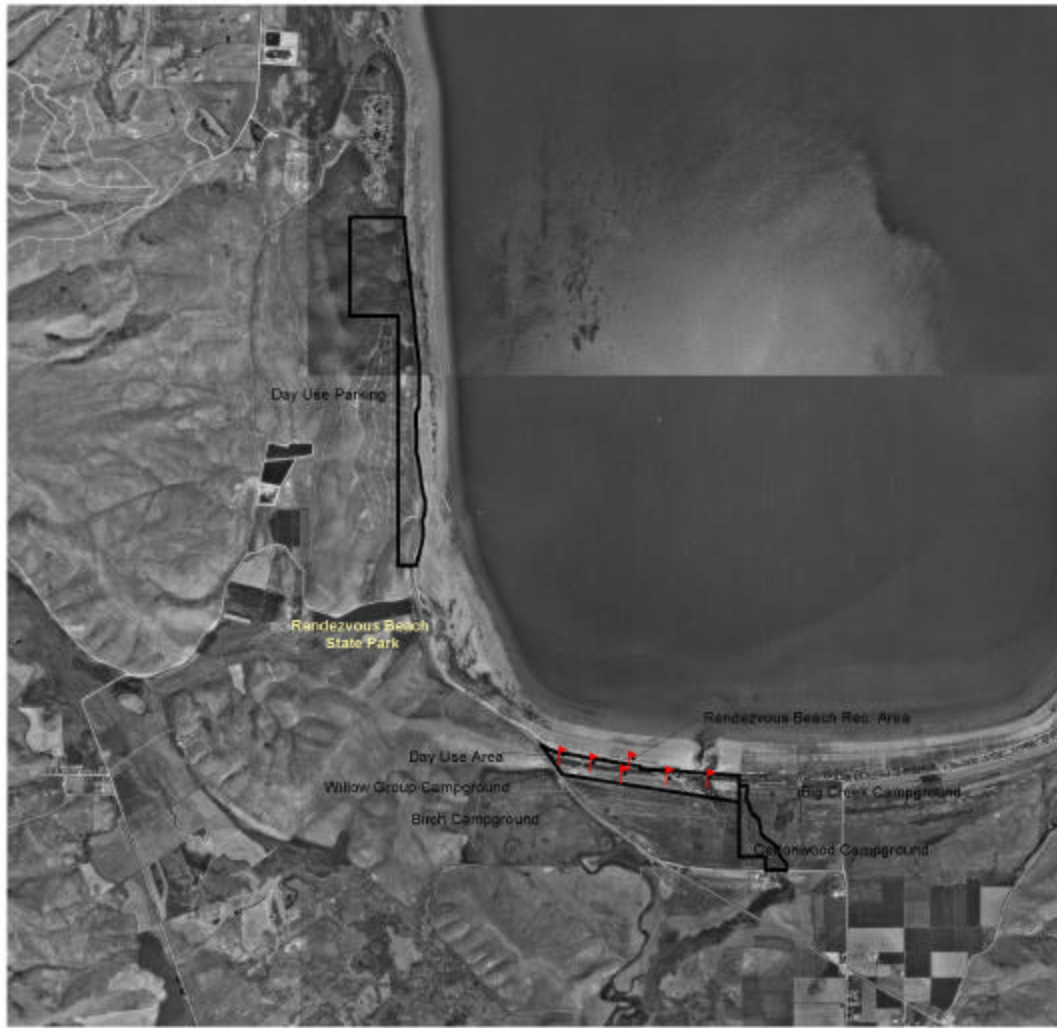
200 0 200 Feet



- Roads
- User Areas
- State Park Boundary

The information in this map was derived from digital databases housed by the Division of Emergency Services and Homeland Security. Care was taken in the creation of this map to insure accuracy, yet this map is provided "as is". DESHS cannot accept responsibility for any errors, omissions, and/or positional accuracy, and therefore there are no warranties which accompany this product. Users are cautioned to field verify information contained within this product before making any decisions.

Bear Lake State Park Mitigation Plan Bear Lake State Park Rendezvous Beach



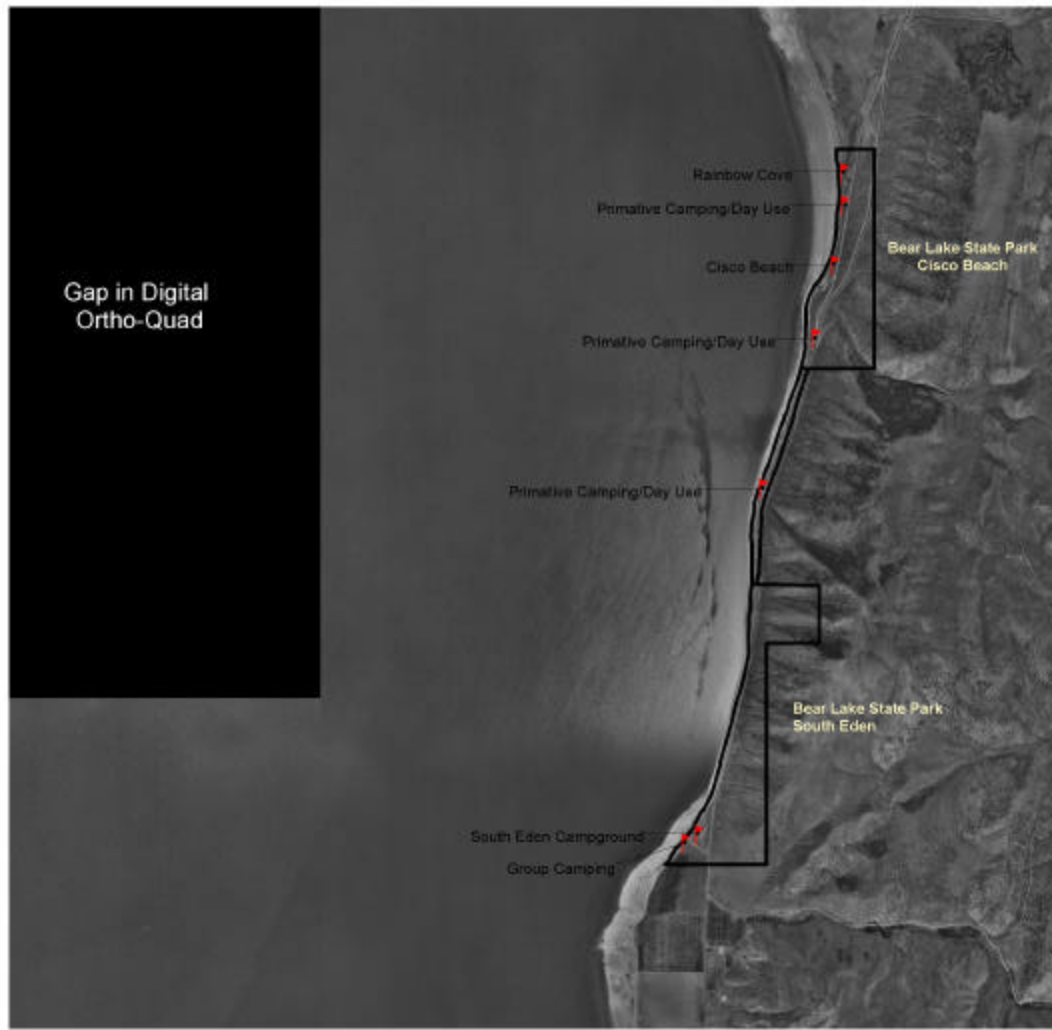
700 0 700 Feet



-  Roads
-  User Areas
-  State Park Boundary

The information in this map was derived from digital databases housed by the Division of Emergency Services and Homeland Security. Care was taken in the creation of this map to insure accuracy, yet this map is provided "as is". DESHS cannot accept responsibility for any errors, omissions, and/or positional accuracy, and therefore there are no warranties which accompany this product. Users are cautioned to field verify information contained within this product before making any decisions.

Bear Lake State Park Mitigation Plan South Eden and Cisco Beach



600 0 600 1200 Feet



-  Roads
-  User Areas
-  State Park Boundary

The information in this map was derived from digital databases housed by the Division of Emergency Services and Homeland Security. Care was taken in the creation of this map to insure accuracy, yet this map is provided "as is". DESHS cannot accept responsibility for any errors, omissions, and/or positional accuracy, and therefore there are no warranties which accompany this product. Users are cautioned to field verify information contained within this product before making any decisions.

